

# Incremental encoders

## Solid shaft with clamping flange

### 100...5000 pulses per revolution

#### EIL580-SC - OptoPulse®



EIL580-SC with clamping flange

#### Technical data - electrical ratings

Voltage supply	5 VDC ±5 % 8...30 VDC 4.75...30 VDC
Reverse polarity protection	Yes
Short-circuit proof	Yes (HTL) Yes (TTL, max. 1 s and 1 signal)
Consumption w/o load	≤70 mA
Pulses per revolution	100...5000
Phase shift	90° ±10°
Duty cycle	40...60 %
Reference signal	Zero pulse, width 90° ±10 %
Sensing method	Optical
Output frequency	≤300 kHz (TTL) ≤160 kHz (HTL)
Output signals	A+, B+, R+, A-, B-, R-
Output stages	TTL/RS422 HTL/push-pull
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Approval	UL 508 / CSA 22.2

#### Features

- Size ø58 mm
- Precise optical sensing
- Output signal level TTL or HTL
- Clamping flange
- Connection axial, radial or tangential
- Pulses per revolution up to 5000
- High protection up to IP 67
- High resistance to shock and vibrations

#### Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø10 x 20 mm, solid shaft with flat ø3/8" x 4/5" (ø9.525 x 20.32 mm), solid shaft with flat
Admitted shaft load	≤40 N axial ≤80 N radial
Flange	Clamping flange
Protection DIN EN 60529	IP 65 (without shaft seal), IP 67 (with shaft seal)
Operating speed	≤6000 rpm (+20 °C, IP 67) ≤12000 rpm (+20 °C, IP 65)
Starting torque	≤0.015 Nm (+20 °C, IP 65) ≤0.02 Nm (+20 °C, IP 67)
Materials	Housing: aluminium die-cast Flange: aluminium Solid shaft: stainless steel
Operating temperature	-40...+85 °C
Relative humidity	90 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 30 g, 10-2000 Hz DIN EN 60068-2-27 Shock 300 g, 6 ms
Connection	Flange connector M12, 8-pin Flange connector M23, 12-pin Cable
Weight approx.	300 g



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#### Accessories

##### Connectors and cables

10127844	Connection cable 2 m shielded with female connector M12, 8-pin, straight (ESG 34FH0200G)
10129332	Connection cable 5 m shielded with female connector M12, 8-pin, straight (ESG 34FH0500G)
10129333	Connection cable 10 m shielded with female connector M12, 8-pin, straight (ESG 34FH1000G)
11053961	Connection cable 2 m shielded with female connector M12, 8-pin, angled (ESW 33FH0200G)
11053962	Connection cable 5 m shielded with female connector M12, 8-pin, angled (ESW 33FH0500G)
10170054	Connection cable 10 m shielded with female connector M12, 8-pin, angled (ESW 33FH1000G)
11095302	Connection cable 1 m shielded with female connector M23, 12-pin
11100408	Connection cable 2 m shielded with female connector M23, 12-pin
11100430	Connection cable 5 m shielded with female connector M23, 12-pin
11100431	Connection cable 10 m shielded with female connector M23, 12-pin

##### Mounting accessories

11065915	Coupling CPS25 L=19 d1=04/d2=10
11065918	Coupling CPS25 L=19 d1=07/d2=10
11065920	Coupling CPS25 L=19 d1=08/d2=10
11065921	Coupling CPS25 L=19 d1=09/d2=10
11065922	Coupling CPS25 L=19 d1=10/d2=06
11065923	Coupling CPS25 L=19 d1=10/d2=10
11065924	Coupling CPS25 L=19 d1=10/d2=11
11065925	Coupling CPS25 L=19 d1=10/d2=12
10141132	Spring washer coupling D1=6 / D2=10 (Z 121.C01)
10141133	Spring washer coupling D1=10 / D2=10 (Z 121.C03)
11034138	Spring washer coupling D1=10 / D2=16 (Z 121.C04)
11034140	Spring washer coupling D1=10 / D2=14 (Z 121.C06)
11034141	Spring washer coupling D1=10 / D2=12 (Z 121.C07)
11050507	Bellows coupling aluminium/stainless steel D1=06 / D2=10
11101781	Double loops coupling D1=10 / D2=10

##### Mounting accessories

10125051	Mounting adaptor for encoders with clamping flange (M3) (Z 119.017)
11065545	Set of eccentric fixings type A
11101893	Tether arm

Matching measuring wheels available as accessories, see under "measuring wheels" (MR).

# Incremental encoders

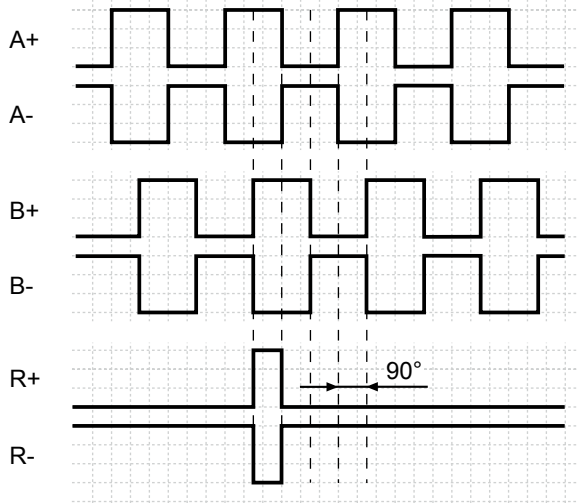
## Solid shaft with clamping flange

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#### Output signals

Clockwise rotating direction when looking at flange.



#### Trigger level

Outputs	TTL/RS422
Output level High	$\geq 2.5$ V
Output level Low	$\leq 0.5$ V
Load	$\leq 20$ mA

Outputs	HTL/Push-pull
Output level High	$\geq U_B - 3$ V
Output level Low	$\leq 1.5$ V
Load	$\leq 20$ mA

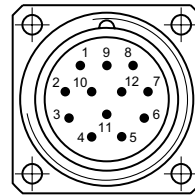
#### Terminal assignment

##### Flange connector M23, 12-pin / cable

Pin	Core color	Assignment
1	pink	B-
2	–	–
3	blue	R+
4	red	R-
5	green	A+
6	yellow	A-
7	–	–
8	grey	B+
9	–	–
10	white	GND
11	–	–
12	brown	UB

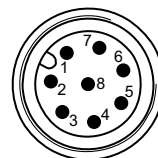
Screen: Connected to housing

Cable data: PVC, [4x2x0.14 mm<sup>2</sup>], bending radius >32.5 mm, outer diameter 6.5 mm



##### Flange connector M12, 8-pin

Pin	Assignment
1	GND
2	UB
3	A+
4	A-
5	B+
6	B-
7	R+
8	R-



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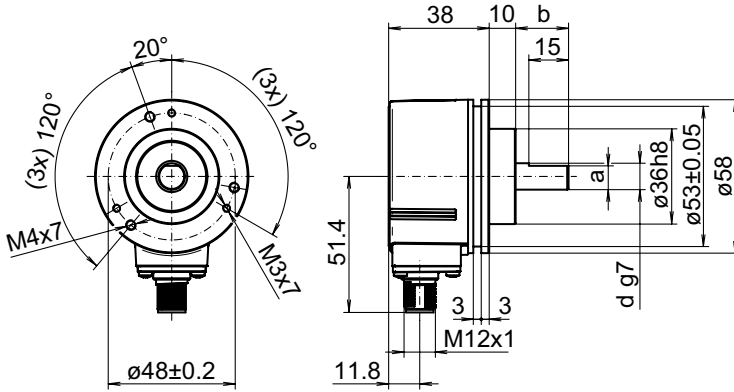
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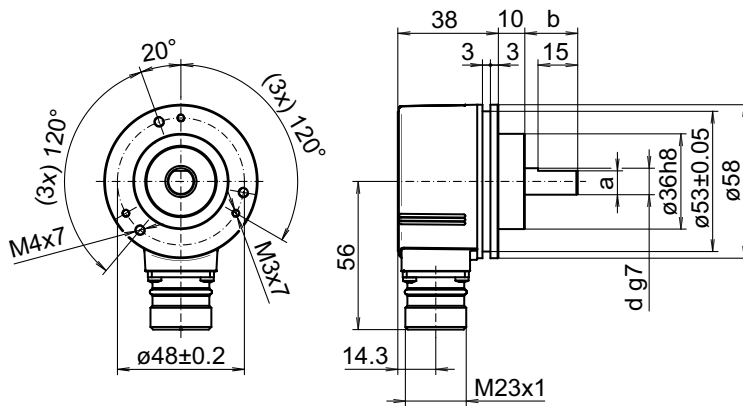
#### Dimensions

##### Flange connector M12, radial



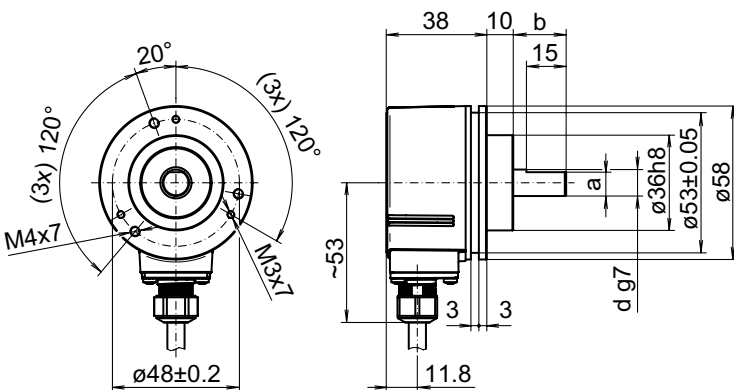
d g7	a	b
ø9.525	8.64	20.32
ø10	9.	20

##### Flange connector M23, radial



d g7	a	b
ø9.525	8.64	20.32
ø10	9.	20

##### Cable, radial



d g7	a	b
ø9.525	8.64	20.32
ø10	9.	20

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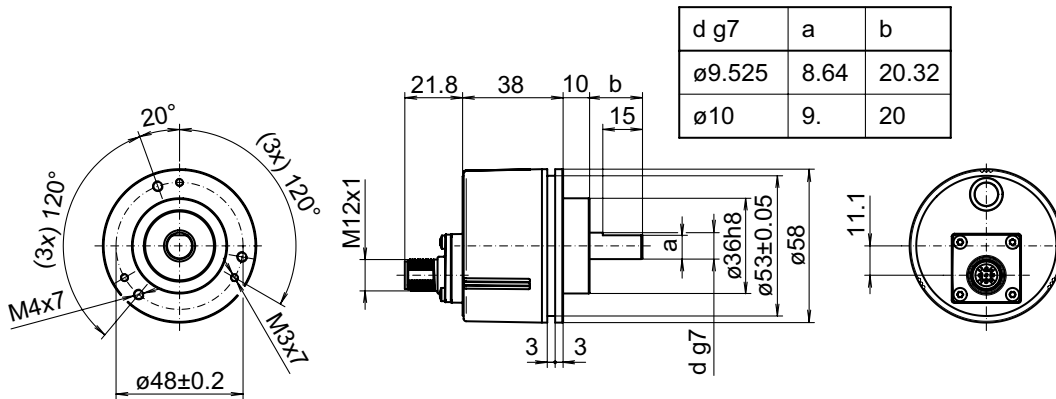
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### 100...5000 pulses per revolution

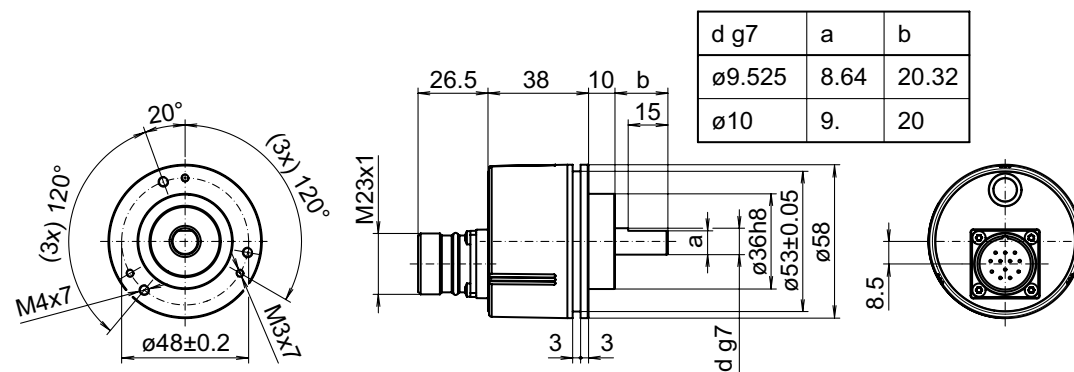
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#### Dimensions

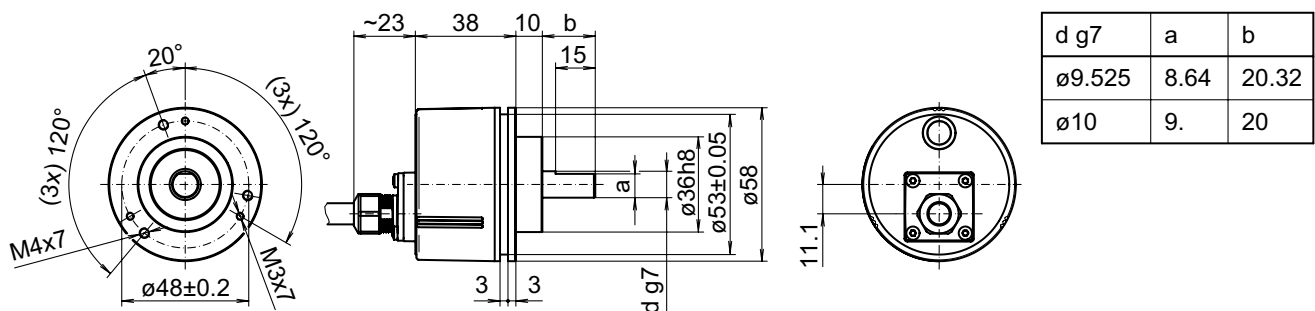
##### Flange connector M12, axial



##### Flange connector M23, axial



##### Cable, axial



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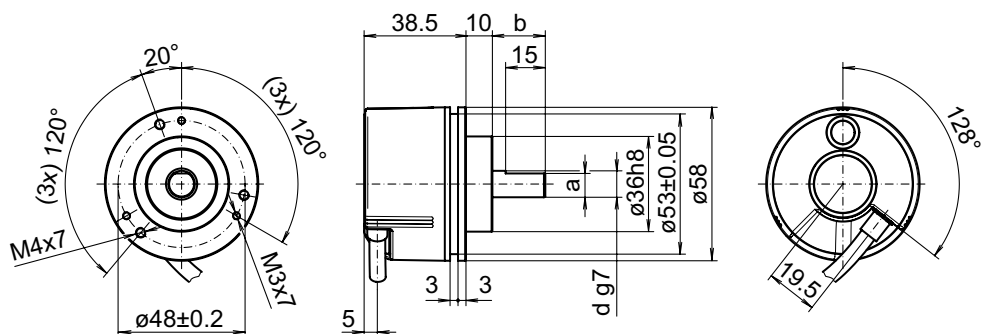
## Solid shaft with clamping flange

### 100...5000 pulses per revolution

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#### Dimensions

Cable, tangential



d g7	a	b
ø9.525	8.64	20.32
ø10	9.	20